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BODDIE, WILLIAM	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/756,713	SCHMITZ ET AL.	
	Examiner	Art Unit	
	WILLIAM L. BODDIE	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *2/29/08*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) *1,3-20,22-30,32-51,53-89 and 91-107* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-20,22-30,32-51,53-89 and 91-107* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/29/08*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. In an amendment dated, October 17th, 2007 the Applicants amended claims 1, 30, 61, 99 and 107. Currently claims 1, 3-20, 22-30, 32-51, 53-89, 91-107 are currently pending.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on February 29th, 2008 has been entered.

Response to Arguments

3. Applicant's arguments filed February 29th, 2008 have been fully considered but they are not persuasive.

4. On pages 21-22, the Applicants argue that Dowling neither discloses all the elements being included in an integrated circuit or that the arrangement of components does not include the currently claimed limitations.

The Examiner must respectfully disagree. The Applicants again allege that Dowling does not disclose including a memory or an interface in the integrated circuit. This argument has been addressed at length in previous office actions and the same responses apply. As to the Applicants argument that the interface is not included in the integrated circuit of Dowling this would seem to be impossible. It is quite clearly shown

in figure 1 of Dowling that the user interface is directly connected to the processor. Applicants, themselves, have admitted that the processor is included in an integrated circuit. Thus at the very least the wiring shown in figure 1 between the user interface and the processor will function as the interface. In other words, when the processor is formed in an integrated circuit it will inherently have an input port to connect to the user interface. This inherent input port would then certainly be able to seen as an interface.

5. The Applicants also argue that the arrangement of components is not within the limitations newly claimed. Specifically, the Applicants argue that Dowling does not disclose a "direct connection" between a user interface and memory as currently claimed. It has never been argued by the Examiner, and isn't now, that Dowling discloses a direct connection between memory and a user interface.

6. On pages 23-25 of the Remarks, the Applicants argue that Colorado does not disclose all of claim 1. It is well established that one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Applicants also argue that Colorado does not teach a user interface or a memory directly connected to the interface. The Examiner must respectfully disagree. As detailed in the below rejection, figure 8 of Colorado discloses a memory directly connected to a user interface.

As shown above, the combination of Dowling and Colorado sufficiently obviates all the limitations of claims 1, 31 and 61, therefore the rejections are maintained.

7. On pages 28-29 of the Remarks, the Applicants traverse the rejection of claim 99, on the same basis that none of the prior art teaches all of the components integrated into a single circuit. As shown above the combination of Dowling and Colorado does teach such an integrated circuit. The Applicants also appear to argue that Mueller is unsuitable prior art due to it teaching multiple integrated circuits.

The Examiner must again stress that Mueller is ***only*** combined for its multiple LEDs per module. It is not contemplated to alter the combination of Dowling and Colorado to include the multiple integrated circuits of Mueller. As such the rejection of claim 99 is seen as proper and is thus maintained.

8. On the remaining pages of the Remarks, the Applicants have argued all the dependent claims are patentable due to their dependence upon allowable independent claims. As shown above, this is not the case. All the rejections of the independent claims have been shown to be pro3per and maintained, therefore the dependent claim rejections are also valid.

9. On the final page of the Remarks, the Applicants note that a total of eight different prior art references have been cited to obviate all of the elements of the invention.

In response to Applicant's argument that the Examiner has combined an excessive number of references, reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

Claim Objections

10. Claim 99 is objected to because of the following informalities: claim 99 is currently labeled as "previously presented." This is blatantly incorrect as claim 99 is amended by the current set of amendments. Applicants are reminded of rule 1.121(c) which details the standard practice. Applicants are kindly requested to abide by this practice in all future correspondence. Appropriate correction is required.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 1, 3-20, 22-30, 32-51, 53-89, 91-107 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Every independent claim recites the new limitation, "an user interface." The Examiner was unable to locate support for this element anywhere within the specification. While discussion of an interface is prevalent there is never any discussion of a "user interface."

All the dependent claims are rejected for the same reason shown above as they contain all the limitations of their specific independent rejection.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

14. Claims 1-3, 8, 11-15, 17-20, 22-23, 26-32, 37, 40-45, 49-51, 53-54, 57-63, 65, 67-70, 75, 78-84, 86-89, 91-92 and 95-98 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701).

With respect to claim 1, Dowling discloses, a system to perform a light show (fig. 1), wherein LED modules (4 in fig. 1) are displaying related light beams having defined properties (parameters in fig. 2a for example), wherein said properties have been defined prior to performing said light show (parameters are stored in a program clear from fig. 2a) is comprising:

an integrated circuit comprising:

an user interface to input information (1 in fig. 1) about properties of said light beams (para. 65), wherein said interface is connected (the interface is clearly connected to the memory, as shown in fig. 1; also see above discussion in response to arguments) to a memory (6 in fig. 1);

a sequencer (2 in fig. 1) to control an LED driver unit (3 in fig. 1), wherein the sequencer is connected to second terminals (LED inherently has a first and second terminal) of an arrangement of at least one LED module (the sequencer is still connected to the second terminal as it clearly within the same set of circuitry);

said LED driver unit (3 in fig. 1) comprising a driver for each color of said LED modules (para. 54) able to control the intensity of light (para. 78 for example); wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module (clear from fig. 3); and

an electrical connection between said LED driver unit and arrangement of at least one LED module (note the wired connection between the controller and LED); and

said arrangement of at least one LED module (three modules in fig. 1).

Dowling does not **explicitly** disclose, that the integrated circuit comprises a memory to store the information about the properties of said beams to be displayed nor that the memory is directly connected to the interface.

Colorado discloses, a system to perform a light show (fig. 7), wherein LED modules (104-106 in fig. 4; col. 4, lines 42-46) are displaying related light beams having defined properties (illumination patterns; 254 in fig. 8), wherein said properties have been defined prior to performing said light show (clear from fig. 8; col. 4, lines 26-28), is comprising:

an integrated circuit comprising:

an user interface (240 in fig. 8) to input information about properties of said light beams, wherein said interface is directly connected to a memory (250 in fig. 8).

a memory to store the information about the properties of said beams to be displayed (250 in fig. 8, for example; col. 2, lines 53-67)

a processor (244 in fig. 8, for example) to control three LED power supplies;

a power supply unit, comprising a power supply for each color of LED modules able to control the intensity of light of each color of LED modules (col. 4, lines 44-47).

Dowling and Colorado are analogous art because they are both from the same field of endeavor namely LED control circuitry.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include and connect Dowling's memory in his integrated circuit, as taught by Colorado.

The motivation for doing so would have been the well-known benefit of decreasing the manufacturing steps necessary to create the device and increasing the functionality of the device.

With respect to claim 3, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said arrangement of one or more LED modules (4 in fig. 1) comprises three LED modules (clear from fig. 1).

With respect to claim 8, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said LED drivers are PWM LED drivers (para. 57).

With respect to claim 11, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said LED drivers are current controlled drivers (para. 52).

With respect to claim 12, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said properties of said light beams comprise different defined brightness for each LED (paras. 59 and 78 for example).

With respect to claim 13, Dowling discloses, the system of claim 1 (see above), wherein said properties of said light beams comprise different defined flashing intervals for each LED (see parameters in fig. 2b for example).

With respect to claim 14, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said properties of said light beams comprise different ON/OFF intervals, different colors, different brightness, and a flashing interval for each LED (note the numerous programs and parameters for each in figs. 2a-2b).

With respect to claim 15, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said LED driver unit is activating the lights in defined time intervals (para. 61).

With respect to claim 17, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said LED driver unit is controlling the transition between different colors of a LED module using a fading interval (para. 59; also note the slow wash parameters in fig. 2a).

With respect to claim 18, Dowling and Colorado disclose, the system of claim 17 (see above).

Dowling further discloses, wherein different options are possible to define said fading interval (see fig. 2a where the change/wash time can be made larger or smaller).

With respect to claim 19, Dowling and Colorado disclose, the system of claim 18 (see above).

Dowling further discloses, wherein said options to define a fading interval include the options “No Fade” (strobe program), “Slow Fade” (slow wash; parameter b), “Linear Fade” (parameter c/d), “Fast Fade” (increase wash; parameter a).

With respect to claim 20, Dowling and Colorado disclose, the system of claim 19 (see above).

Dowling further discloses, where only a few of said options are being used (from the diagram in fig. 2a/b it seems clear that the user can only use one “option” at a time).

With respect to claim 22, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said circuit is realized in an ASIC (para. 53-54).

With respect to claim 23, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said LEDs are connected to said circuit via output pins (clear from fig. 1 and para. 54).

With respect to claim 26, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said properties of said light beams comprise a light pattern over a multitude of LED modules (para. 78; for example).

With respect to claim 27, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said properties of said light beams comprise a light intensity setting (paras. 59 and 78 for example).

With respect to claim 28, Dowling and Colorado disclose, the system of claim 27 (see above).

Dowling further discloses, wherein said light intensity setting is defined for each LED individually (para. 54).

With respect to claim 29, Dowling and Colorado disclose, the system of claim 1 (see above).

Dowling further discloses, wherein said properties of said light beams comprise a defined sequencing of said LEDS (para. 69; also note the blink parameters in fig. 2b).

With respect to claim 30, Dowling discloses, a system for visual, electronic communication, highlighting information/events (fig. 1), wherein LED modules are displaying related light signals having defined properties representing said different information/events (para. 69, for example), is comprising:

an integrated circuit comprising:

an user interface to input information (1 in fig. 1) about properties of said light beams (para. 65), wherein said interface is connected to a memory (6 in fig. 1; the interface is clearly connected to the memory, as shown in fig. 1; also see above discussion in response to arguments);

a sequencer to control an LED driver unit (2 in fig. 1), wherein the sequencer is connected to second terminals (LED inherently has a first and second terminal) of an arrangement of at least one LED module (the sequencer is still connected to the second terminal as it clearly within the same set of circuitry);

said LED driver unit (3 in fig. 1) comprising a driver for each color of said LED modules (para. 54) able to control the intensity of light (para. 78 for example), wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module (clear from fig. 3); and

an electrical connection between said LED driver unit and said arrangement of at lest one LED module (note the wired connection between the controller and LED); and

said arrangement of at least one LED module (three modules in fig. 1).

Dowling does not **explicitly** disclose, that the integrated circuit comprises a memory to store the information about the properties of said beams to be displayed nor that the memory is directly connected to the interface.

Colorado discloses, a system to perform a light show (fig. 7), wherein LED modules (104-106 in fig. 4; col. 4, lines 42-46) are displaying related light beams having defined properties (illumination patterns; 108 in fig. 4), wherein said properties have

been defined prior to performing said light show (clear from fig. 4; col. 4, lines 26-28), is comprising:

an integrated circuit comprising:

an user interface (240 in fig. 8) to input information about properties of said light beams, wherein said interface is directly connected to a memory (250 in fig. 8)

a memory to store the information about the properties of said beams to be displayed (154 in fig. 4, for example; col. 2, lines 53-67)

a processor (176 in fig. 5, for example) to control three LED power supplies;

a power supply unit, comprising a power supply for each color of LED modules able to control the intensity of light of each color of LED modules (col. 4, lines 44-47).

Dowling and Colorado are analogous art because they are both from the same field of endeavor namely LED control circuitry.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include and connect Dowling's memory in his integrated circuit, as taught by Colorado.

The motivation for doing so would have been the well-known benefit of decreasing the manufacturing steps necessary to create the device and increasing the functionality of the device.

With respect to claims 32, 37, 40-45, 48-51, 53-54 and 57-60, as these claims are identical to those previously rejected, specifically claims 3, 8, 11-15, 17-23 and 26-29, claims 32, 37, 40-45, 48-54 and 57-60 are rejected on the same merits shown above in their identical claims.

With respect to claim 61, Dowling discloses, a phone system (para. 93) highlighting information/events wherein LED modules are displaying related signals representing said different information/events (para. 69 for example), is comprising:

an integrated circuit comprising:

an user interface to input information (1 in fig. 1) about properties of said light beams (para. 65), wherein said interface is connected (the interface is clearly connected to the memory, as shown in fig. 1; also see above discussion in response to arguments) to a memory (6 in fig. 1);

a sequencer (2 in fig. 1) to control an LED driver unit (3 in fig. 1), wherein the sequencer is connected to second terminals (LED inherently has a first and second terminal) of an arrangement of at least one LED module (the sequencer is still connected to the second terminal as it clearly within the same set of circuitry);

said LED driver unit (3 in fig. 1) comprising a driver for each color of said LED modules (para. 54) able to control the intensity of light (para. 78 for example); wherein the LED driver unit is connected between said memory and first terminals of said arrangement of at least one LED module (clear from fig. 3); and

an electrical connection between said LED driver unit and arrangement of at least one LED module (note the wired connection between the controller and LED); and

said arrangement of at least one LED module (three modules in fig. 1).

Dowling does not **explicitly** disclose, that the integrated circuit comprises a memory to store the information about the properties of said beams to be displayed nor that the memory is directly connected to the interface.

Colorado discloses, a system to perform a light show (fig. 7), wherein LED modules (104-106 in fig. 4; col. 4, lines 42-46) are displaying related light beams having defined properties (illumination patterns; 108 in fig. 4), wherein said properties have been defined prior to performing said light show (clear from fig. 4; col. 4, lines 26-28), is comprising:

an integrated circuit comprising:

an user interface (240 in fig. 8) to input information about properties of said light beams, wherein said interface is directly connected to a memory (250 in fig. 8)

a memory to store the information about the properties of said beams to be displayed (154 in fig. 4, for example; col. 2, lines 53-67)

a processor (176 in fig. 5, for example) to control three LED power supplies;

a power supply unit, comprising a power supply for each color of LED modules able to control the intensity of light of each color of LED modules (col. 4, lines 44-47).

Dowling and Colorado are analogous art because they are both from the same field of endeavor namely LED control circuitry.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include and connect Dowling's memory in his integrated circuit, as taught by Colorado.

The motivation for doing so would have been the well-known benefit of decreasing the manufacturing steps necessary to create the device and increasing the functionality of the device.

With respect to claims 62-63, Dowling and Colorado disclose, the system of claim 61 (see above).

Dowling does not expressly disclose where the LED modules are located on the phone.

Colorado discloses, a phone system with LED modules (220, 212 in fig. 7 for example) located on the front of the phone in a prominent location (clear from fig. 7; col. 6, liens 16-32).

At the time of the invention it would have been obvious to one of ordinary skill in the art to place the LED modules of Dowling on the phone as taught by Colorado.

One motivation for doing so would have been to allow for the user to change the appearance of the phone, akin to changing the faceplate (Colorado; col. 1, lines 23-33).

With respect to claim 65, Dowling and Colorado disclose, the system of claim 61 (see above).

Dowling further discloses, wherein the phone system is a mobile phone (para. 93).

With respect to claim 67, Dowling and Colorado disclose, the system of claim 61 (see above).

Dowling further discloses, wherein said phone comprises composer software to define the parameters of said sequencer (program 1-4 in figs. 2a/b) and to download said parameters (para. 65 for example) to said memory (para. 56).

With respect to claim 68, Dowling and Colorado disclose, the system of claim 61 (see above).

Dowling further discloses, wherein the parameters of said sequencer are downloaded from a PC (para. 118).

With respect to claim 69, Dowling and Colorado disclose, the system of claim 61 (see above).

Dowling further discloses, wherein the parameters of said sequencer are downloaded from the Internet (network in fig. 27 and para. 118; also note para. 92).

With respect to claims 70, 75, 78-84, 86-89, 91-92 and 95-98, as these claims are identical to those previously rejected, specifically claims 2-3, 8, 11-15, 17-23 and 26-29, claims 70, 75, 78-84, 86-92 and 95-98 are rejected on the same merits shown above in their identical claims.

15. Claims 4-7, 33-36, 71-74, 99-100, and 102-106 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701) and further in view of Mueller et al. (US 6,016,038).

With respect to claim 4, Dowling and Colorado disclose, the system of claim 1 (see above).

Neither Dowling nor Colorado expressly disclose, wherein said arrangement of one or more LED modules comprises more than one LED each.

Mueller discloses, a LED driving system wherein an arrangement of LED modules (120, 140, 160 in fig. 1) comprises more than one LED each (col. 3, lines 30-34).

Mueller, Colorado and Dowling are analogous art because they are from the same field of endeavor namely, LED drivers and control circuitry.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include numerous LEDs in each module.

The motivation for doing so would have been to increase the intensity of the LED display (Dowling; para. 89).

With respect to claim 5, Mueller, Colorado and Dowling disclose, the system of claim 4 (see above).

Dowling as modified above further discloses, wherein said arrangement of one or more LED modules comprises three LEDs each (Mueller; col. 3, lines 30-34; discloses 27 red LEDs, and 25 green and blue LEDs; thus each module comprises three LEDs in addition to extra LEDs).

With respect to claims 6 and 7, Mueller, Colorado and Dowling disclose, the system of claim 5 (see above).

Dowling further discloses, wherein said three LEDs each emit red, green and blue light (para. 57).

With respect to claims 33-36 and 71-74, as these claims are identical to those previously rejected, specifically claims 4-7, claims 33-36 and 71-74 are rejected on the same merits shown above in their identical claims.

With respect to claim 99, Dowling discloses, a method to establish visual, electronic communication (fig. 2a/b), highlighting information/events, wherein LED modules (4 in fig. 1) are displaying related light signals having defined properties (brightness/strobe time/change time etc.) representing said different information/events (para. 69 for example) comprising:

providing an integrated circuit comprising an user interface (1 in fig. 1), being connected to a memory (6 in fig. 1), a sequencer (2 in fig. 1), a LED driver unit connected to LEDs (3 in fig. 1), and one or more LED modules (4 in fig. 1);

determine the information to be visually highlighted (para. 92);

define the kind of highlighting of the information selected above (selection of a program; para. 65);

compose the sequencer steps according to the definitions of the two steps above (selection of the mode/program operating in as well as the parameters listed in figs. 2a/b);

if said composing software is built into the phone store the sequences in said memory (para. 52);

ready for operation (figs. 2a/b).

Dowling does not **explicitly** disclose, that the integrated circuit comprises a memory, directly connected to an interface, to store the information about the properties of said beams to be displayed or wherein said arrangement of one or more LED modules comprises more than one LED each.

Colorado discloses, a system to perform a light show (fig. 7), wherein LED modules (104-106 in fig. 4; col. 4, lines 42-46) are displaying related light beams having defined properties (illumination patterns; 108 in fig. 4), wherein said properties have been defined prior to performing said light show (clear from fig. 4; col. 4, lines 26-28), is comprising:

an integrated circuit comprising:

an user interface (240 in fig. 8) to input information about properties of said light beams, wherein said interface is directly connected to a memory (250 in fig. 8)

a memory to store the information about the properties of said beams to be displayed (154 in fig. 4, for example; col. 2, lines 53-67)

a processor (176 in fig. 5, for example) to control three LED power supplies;

a power supply unit, comprising a power supply for each color of LED modules able to control the intensity of light of each color of LED modules (col. 4, lines 44-47).

Dowling and Colorado are analogous art because they are both from the same field of endeavor namely LED control circuitry.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include and connect Dowling's memory in his integrated circuit, as taught by Colorado.

The motivation for doing so would have been the well-known benefit of decreasing the manufacturing steps necessary to create the device and increasing the functionality of the device.

Neither Dowling nor Colorado expressly disclose, wherein an arrangement of LED modules comprises more than one LED each.

Mueller discloses, a LED driving system wherein an arrangement of LED modules (120, 140, 160 in fig. 1) comprises more than one LED each (col. 3, lines 30-34).

Mueller, Colorado and Dowling are analogous art because they are from the same field of endeavor namely, LED drivers and control circuitry.

At the time of the invention it would have been obvious to one of ordinary skill in the art to include numerous LEDs in each module.

The motivation for doing so would have been to increase the intensity of the LED display (Dowling; para. 89).

With respect to claims 100 and 102-106, Dowling, Colorado and Mueller disclose, the method of claim 99 (see above).

Dowling further discloses, wherein said related light signals representing said different information/events are displayed using lights, different colors (para. 69), different brightness (para. 57), a flashing interval (speed up / slow down in fig. 2b), and an assignment to specific positions (para. 118; note the numerous examples throughout Dowling, as well as the programs in fig. 2a/b).

16. Claims 9-10, 38-39 and 76-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701) and further in view of Tokimoto et al. (US 6,690,341).

With respect to claims 9 and 10, Dowling and Colorado disclose, the system of claim 8 (see above), wherein said PWM drivers are capable of varying the intensity of the LEDs to generate a wide gamut of colors (Dowling; para. 57).

Neither Dowling nor Colorado expressly disclose, that 4-bit drivers are used therefore enabling 4096 colors to be displayed.

Tokimoto discloses, a LED display system (fig. 1) wherein a 4-bit driver (15 in fig. 5) is used therefore enabling 4096 colors (col. 3, lines 59-62).

Dowling, Colorado and Tokimoto are analogous art because they are both from the same field of endeavor, namely control circuitry for LED display systems comprising RGB LEDs.

At the time of the invention it would have been obvious to one of ordinary skill in the art to drive the LEDs of Dowling with 4-bit drivers enabling 4096 colors as taught by Tokimoto.

The motivation for doing so would have been to enable a wide gamut of colors thus allowing more accurate image reproduction.

With respect to claims 38-39 and 76-77, as these claims are identical to those previously rejected, specifically claims 9-10, claims 38-39 and 76-77 are rejected on the same merits shown above in their identical claims.

17. Claims 16, 47 and 85 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701) and further in view of Nishimura et al. (US 2003/013484).

With respect to claim 16, Dowling and Colorado disclose, the system of claim 1 (see above), wherein said LED driver unit is controlling the transition between different colors of a LED module (Dowling; figs. 2a/b).

Neither Dowling nor Colorado expressly disclose the use of a flash mode where the maximum brightness is obtained followed by a set brightness.

Nishimura discloses, a LED driver (127 in fig. 15) that uses a “flash” mode at turn on point of time wherein a LED (137 in fig. 15) is turned on initially to its maximum

brightness followed quickly by the set brightness (paras. 169, 174; also note the drive voltage for the LED in fig. 20).

Nishimura, Colorado and Dowling are analogous art because they are both from the same field of endeavor namely, driver circuitry and methods of driving LEDs.

At the time of the invention it would have been obvious to one of ordinary skill in the art to operate the LEDs of Dowling, in a flash mode as taught by Nishimura.

The motivation for doing so would have been to illuminate the image field prior to taking a picture with a camera.

With respect to claims 47 and 85, as these claims are identical to those previously rejected, specifically claim 16, claims 47 and 85 are rejected on the same merits shown above in their identical claims.

18. Claims 24-25, 55-56 and 93-94 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701) and further in view of Sasaki et al. (US 6,404,139).

With respect to claims 24 and 25, Dowling and Colorado discloses, the system of claim 23 (see above).

Neither Colorado nor Dowling expressly disclose, wherein nine output pins are arranged and controlled by a multiplexer arrangement.

Sasaki discloses, a multiplexer arrangement (fig. 5/6) that is similar to the Applicant's multiplexer arrangement, upon use of the 20 LED device (fig. 5/6), it is clear that nine output pins (5 columns, 4 rows) would be used.

Sasaki, Colorado and Dowling are analogous art because they are both from the same field of endeavor namely, driver circuitry and methods of driving LEDs.

At the time of the invention it would have been obvious to one of ordinary skill in the art to address the LED modules of Dowling and Colorado as taught by Sasaki.

The motivation for doing so would have been the decreased circuitry necessary to individually address the devices.

With respect to claims 55-56 and 93-94, as these claims are identical to those previously rejected, specifically claims 24-25, claims 55-56 and 93-94 are rejected on the same merits shown above in their identical claims.

19. Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701) and further in view of Kitano et al. (US 2003/0216151).

With respect to claim 64, Dowling and Colorado discloses, the system of claim 61 (see above).

Neither Colorado nor Dowling expressly disclose, that the LED modules are located on the sides of the phone.

Kitano discloses, a phone system (fig. 1) having LED modules (11 in fig. 1) that are located on the sides of the phone system (note the abstract; para. 12, and claim 2).

Kitano, Colorado and Dowling are analogous art because they are both from the same field of endeavor namely, driver circuitry and methods of driving LEDs.

At the time of the invention it would have been obvious to one of ordinary skill in the art to place the LED modules of Dowling and Colorado on the phone as taught by Kitano.

The motivation for doing so would have been to allow the LEDs to be quickly and easily viewable by the user.

20. Claim 66 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701) and further in view of Kota et al. (US 7,003,318).

With respect to claim 66, Dowling and Colorado disclose, the system of claim 65 (see above).

Neither Colorado nor Dowling expressly disclose, that the LED modules are located on the back of the phone.

Kota discloses, a phone system (fig. 1) having LED modules (105 in fig. 1b) that are located on the back of the mobile phone (seems clear from figs. 1a-c).

Kota, Colorado and Dowling are analogous art because they are both from the same field of endeavor namely, driver circuitry and methods of driving LEDs.

At the time of the invention it would have been obvious to one of ordinary skill in the art to place the LED modules of Dowling and Colorado on the phone as taught by Kota.

The motivation for doing so would have been to allow the LEDs to be quickly and easily viewable by the user.

21. Claim 101 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701) and Mueller et al. (US 6,016,038) and further in view of Tokimoto et al. (US 6,690,341).

With respect to claim 101, Dowling, Colorado and Mueller disclose, the method of claim 100 (see above), wherein said PWM drivers are capable of varying the intensity of the LEDs to generate a wide gamut of colors (Dowling; para. 57).

Neither Colorado, Mueller nor Dowling expressly disclose, that 4-bit drivers are used therefore enabling 4096 colors to be displayed.

Tokimoto discloses, a LED display system (fig. 1) wherein a 4-bit driver (15 in fig. 5) is used therefore enabling 4096 colors (col. 3, lines 59-62).

Dowling, Colorado, Mueller and Tokimoto are analogous art because they are both from the same field of endeavor, namely control circuitry for LED display systems comprising RGB LEDs.

At the time of the invention it would have been obvious to one of ordinary skill in the art to drive the LEDs of Dowling, Colorado and Mueller with 4-bit drivers enabling 4096 colors as taught by Tokimoto.

The motivation for doing so would have been to enable a wide gamut of colors thus allowing more accurate image reproduction.

22. Claim 107 is rejected under 35 U.S.C. 103(a) as being unpatentable over Dowling et al. (US 2002/0070688) in view of Colorado (US 7,016,701) and Mueller et al. (US 6,016,038) and further in view of Nishimura et al. (US 2003/013484).

With respect to claim 107, Dowling, Colorado and Mueller disclose, the system of claim 106 (see above), wherein said LED driver unit is controlling the transition between different colors of a LED module (Dowling; figs. 2a/b).

Neither Colorado, Mueller nor Dowling expressly disclose the use of a flash mode where the maximum brightness is obtained followed by a set brightness.

Nishimura discloses, a LED driver (127 in fig. 15) that uses a "flash" mode at turn on point of time wherein a LED (137 in fig. 15) is turned on initially to its maximum brightness followed quickly by the set brightness (paras. 169, 174; also note the drive voltage for the LED in fig. 20).

Nishimura, Colorado, Mueller and Dowling are analogous art because they are both from the same field of endeavor namely, driver circuitry and methods of driving LEDs.

At the time of the invention it would have been obvious to one of ordinary skill in the art to operate the LEDs of Dowling, Colorado and Mueller, in a flash mode as taught by Nishimura.

The motivation for doing so would have been to illuminate the image field prior to taking a picture with a camera.

Conclusion

23. Any inquiry concerning this communication or earlier communications from the examiner should be directed to WILLIAM L. BODDIE whose telephone number is (571)272-0666. The examiner can normally be reached on Monday through Friday, 7:30 - 4:30 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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/Sumati Lefkowitz/
Supervisory Patent Examiner, Art Unit 2629

/W. L. B./
Examiner, Art Unit 2629
3/24/08